

BULLETIN
OF THE
BROOKLYN ENTOMOLOGICAL SOCIETY

VOL. XX

FEBRUARY, 1925

No. 1

NORTH AMERICAN SPECIES OF *BORBORUS*
MEIGEN, AND *SCATOPHORA* *ROBINEAU-*
DESVOIDY.¹

BY ANTHONY SPULER, Pullman, Washington.

INTRODUCTION.

Dr. Oswald Duda in his revision of the old world forms of the genus *Borborus* reduces the genus *Olina* to a subgenus of *Borborus*. *Olina* lacks the tibial spur found in *Borborus*. Duda regards this character as unimportant but the writer feels that the absence or presence of such a character as a tibial spur is of generic importance and that the genus should be retained.

The species *B. geniculatus* Macq. is the same as *S. carolinensis* Rob.-Des. and should be regarded as a synonym of *carolinensis*. The genus *Scatophora* was established in 1830 with *carolinensis* as the genotype. (Myod. 811. 1830.) *B. geniculata* the type for the genus *Olina* was not described until 1835. (Macquart: Suites à Buff. II. 567. 6, 1835.) From the standpoint of priority *Scatophora* should replace *Olina*.

In his subdivision of the genus *Borborus*, Dr. O. Duda erects the subgenus *Trichiaspis* but does not designate a type species. However, he names *B. equinus*, the genotype of *Borborus* as one of the species that comes within this subgenus. Since *B. equinus* is the genotype of *Borborus* the subgenus containing *B. equinus* should be called *Borborus*. This paper is one of a series of papers

¹Contribution from the Division of Entomology of the Agricultural Experiment Station, State College of Washington.

on the family Borboridae. Unless otherwise designated, the type species were placed in the Melander collection.

Scatophora and *Borborus* comprise a group in the Borboridae whose species have a distinct second basal and anal cells and a complete fourth vein. These species also have some bristles or setae on the mesonotum and scutellum. The genera *Scatophora* and *Borborus* can be separated as follows:

Hind tibiae without an apical spur; scutellum with three pairs of convergent setae and two apical bristles.

Scatophora Rob.-Des.

Hind tibiae with an apical spur; scutellum with four or more marginal bristles **Borborus** Meig.

Scatophora carolinensis Robineau-Desvoidy. (Fig. 12.)

Robineau-Desvoidy: Myod. 811. XI. (1830).

geniculata Macquart: Suites à Buff. II. 567. 6 (1835).

(*Borborus*); Duda: Arch. f. Naturg. 89. abt. A. 4. 99 (1923). (*Olinia*.)

Shining black species. Front much broader than deep with an M-shaped reddish yellow area on lower margin, interfrontal bristles in eight pairs; orbital stripes with numerous setulae; bristles of vertex and occiput not very strong; face deeply concave in profile, labrum produced; third antennal joint ovate, piceous; arista almost bare, three times antennal length; cheeks yellowish anteriorly, two-fifths as high as eye. Mesonotum with a single pair of dorso-central bristles; acrostichal setulae short, in four rows; scutellum broad and short, posterior margin rounded, with three pairs of convergent setae and two apical bristles. Wings hyaline; second section of costa three times as long as third; inner crossvein beyond basal third of discal cell, fifth vein produced slightly beyond outer crossvein. Legs black with coxae, trochanters and knees yellowish; front femora incrassate; hind femora long and curved, hind tibiae devoid of an apical spur; hind metatarsi thickened, three-fourths as long as the second joint. Length 4 mm.

One hundred and ninety-four specimens from the following localities were examined: WASHINGTON: Ilwaco (Spuler), Pullman (Mann-Melander), Lynden, Mt. Constitution, Chimacum, Spokane, Friday Harbor, Stevenson, Wawawai, Winlock, Clarks-ton, Seattle, Woodland, Pt. Gamble, Washougal, Tokeland, La-Center, Kamiac Butte, Almota, Bellingham, Nahcotta, and Ken-newick (Melander). IDAHO: Moscow (Melander). BRITISH

COLUMBIA: Nelson (Melander). CALIFORNIA: Muir Woods (Melander), Redwood Canyon, Leona Heights, Mesa Grande, Berkeley Hills (Cresson). MONTANA: Libby (Melander), Hamilton (Asbury and Stiles). OHIO: Wauseon (Hine). ILLINOIS: Champaign Co. (Snow). INDIANA: Lafayette (Melander). VERMONT: Lynden (Melander). MASSACHUSETTS: New Bedford (Hough), Greenfield, Forest Hills (Melander). NEW YORK: Geneva, Cold Spring Harbor (Melander). PENNSYLVANIA: Swarthmore, Delaware Co., Jack Run (Cresson).

Borborus Meigen.

Meigen: Illig. Mag., II. 276 (1803). Duda: Arch. f. Naturg. Abt. A. 4 (1923).

Black to brownish flies. Head hemispherical; mouth margin more or less produced; vibrissae strong; front broad, usually bristly; antennae short, third joint rounded or obtusely pointed, arista strong, pubescent or bare. Notum convex, narrowed anteriorly, lateral and posterior margins bristly; scutellum broad, triangular or trapezoidal, margin with some bristles. Abdomen with six to seven segments; male genitalia usually prominent. Legs moderately long, hind legs elongated; front and hind femora often incrassate; hind metatarsi usually thickened, shorter than the second tarsal joint; hind tibiae with an apical spur. Wings longer than the abdomen; crossveins widely separated; third vein not branched, third and fourth veins reaching wing-margin, fifth vein terminating at or some distance beyond outer crossvein, never reaching wing-margin; second basal and anal cells distinct. Genotype.—*B. equinus* Fallen.

GROUPS OF BORBORUS.

Buccal bristle strong; mesonotum with four rows of acrostichal setae between the dorsocentral rows; scutellum with four marginal bristles, rarely with six; hind tibiae with a distinct long and strong bristle on apical third of flexor surface; middle tibiae with a row of bristle-like setae on extensor surface.

armati (Duda).

Buccal bristle weaker or entirely absent; mesonotum with but two rows of acrostichal setae between dorsocentral rows; scutellum with four or more marginal bristles; hind tibiae without a distinct bristle on apical third or flexor surface; middle tibiae with a distinct preapical bristle-like hair, never with a row of bristle-like setae *inermes* (Duda).

Subgenera of armati.

Hind tibiae with a distinct bristle-like hair on flexor surface near middle; antennae only slightly divergent; eyes large.

Crumomyia Macq.

Hind tibiae without such bristle-like hair. . *Stratioborborus* Duda.

Borborus Species of Subgenus Crumomyia Macq.

- i. Wings with heavy black markings along both outer and inner crossveins; inner crossvein at basal third of discal cell; dorso-central bristles in three pairs; face and legs for the most part black; legs very hairy; abdomen very broad; large species 4 mm. Fig. 1 *immensus* n. sp.
Wings without such markings; inner crossvein a little beyond basal third of discal cell; one distinct pair of dorsocentral bristles present; face deeply concave in profile; lower margin of epistome curved up; labrum not produced; cheeks nearly half as high as eye; arista two and one-half times antennal length; acrostichal setulae short and numerous.

niger Meig.

***Borborus (Crumomyia) immensus* n. sp. (Fig. 1.)**

Subshining black. Front one and one-fourth times as broad as deep; divergent stripes velvety black; bristles long; fronto-orbital bristles nearly uniform in size; orbital setulae distinct, numerous; interfrontal bristles in six pairs, the anterior four pairs cruciate; cheeks slightly silvery pollinose, posterior portion glossy black; face deeply concave in profile; anterior margin of epistome distinctly curved up; labrum slightly produced; third joint of antennae rounded, more than two times as large as second; arista two and one-half times antennal length, sparsely pubescent; cheeks one-half as high as eye; buccae with a strong upcurved bristle and numerous irregularly arranged setae; oral setae long; vibrissae very long. Mesonotum lightly brownish pruinose; dorsocentral bristles in three pairs; acrostichal setulae long, in six rows between the dorsocentral bristles; scutellum broad triangular, margined with four long bristles and two small, cruciate setae at apex; upper pleura pruinose; sternopleura glossy black, upper portion with two reduced bristles. Legs very long hairy, shining black, slightly grayish pollinose, with trochanters, knees, apices of tibiae and tarsi reddish brown; middle tibiae with a number of preapical bristles; hind femora long and slender, with a number of hair-like extensor bristles; hind tibiae with a very long hair-like bristle near

apex; hind metatarsi but little thickened, nearly as long as next joint. Wings infumated, veins brown with heavy brownish markings on both outer and inner crossveins; second section of costa three and one-half times as long as third and six times as long as fourth; last section of second veins three and one-half times basal section of third vein; penultimate section of fourth vein one and one-half times basal section of third vein and three and one-half times outer crossvein; last sections of third and fourth veins slightly converging towards tip of wing; inner crossvein distinctly beyond basal third of discal cell; outer angle of discal cell short appendiculate. Abdomen broad; dorsum with numerous minute hairs; segments equal. Halteres dark fuscous. Length 4 mm.

Type.—Female: Hampton, N. H., March 8, 1904. S. A. Shaw, Collector; *Paratypes*.—Two specimens from Hampton, N. H. (Shaw) (C. W. Johnson collection).

Borborus (Crumomyia) niger Meigen.

Meigen: S. B. VI. 201 (1830). Duda: Arch. f. Naturg. 89. abt. A. 4. 64 (1923).

Dr. Hough identified material from Tifton, Georgia, as this species. This is the only evidence that this European species occurs in America.

Borborus Species of Subgenus Stratioborborus Duda.

1. Wings with heavy black markings along both inner and outer crossveins 2
 Wings without such markings; inner crossvein at basal third of discal cell; labrum produced; arista a little more than three times antennal length; cheeks one-fourth as high as eye; mesonotum with three distinct pairs of dorsocentral bristles; acrostichal setulae long. Fig. 11 *setitibialis* n. sp.
2. Fifth vein ending at outer crossvein; arista long, six times as long as third antennal joint; halteres piceous; front femora swollen, bristly; middle tibiae with a distinct bristle at middle of flexor surface in addition to the usual extensor bristles; hind femora long, distinctly curved; hind tibiae long hairy. Fig. 2 *annulus* Walk.
 Fifth vein produced beyond outer crossvein; halteres yellow; legs for the most part yellow or browned; hind femora

shorter, straight; middle tibiae with stronger extensor bristle; hind tibiae with numerous long hairs on extensor surface; dorsocentral bristles strong. Fig. 6 . . . *maculipennis* n. sp.

Borborus (Stratioborborus) setitibialis n. sp. (Fig. 11.)

Glossy black species. Front a little broader than long, the divergent stripes and lower front opaque velvety black, forming a distinct M-shaped mark; interfrontal bristles in five pairs; lower front setulose; antennae grayish, third joint rounded; arista a little more than three times antennal length, its pubescence becoming rather long toward tip; face and cheeks grayish; face concave; labrum produced; cheeks one-fourth as high as eye; oral margin with long hairs; buccae with four bristles, the anterior one very long and strong; vibrissae strong; eyes large. Mesonotum with three distinct pairs of dorsocentral bristles; acrostichal setulae long, in four rows; scutellum rather small, triangular; marginal bristles four; upper pleura opaque, grayish. Legs very hairy; coxae, trochanters, tibiae and tarsi brown; front femora incrassate; middle tibiae with six extensor and two flexor bristles; hind femora slightly swollen; hind metatarsi thickened, as long as the second joint. Abdomen rather long, tapering apically, venter yellowish; hypopygium hairy, slightly gray dusted. Wings brownish; veins brown; second section of costa three times third; third and fourth veins parallel; inner crossvein at basal third of discal cell; outer crossvein at three times its own length from inner, fifth vein extending a short distance from outer crossvein. Halteres yellow. Length 4 mm.

Holotype.—Male; Mt. Washington, New Hampshire. (Mrs. Slosson.)

Borborus (Stratioborborus) annulus Walker. (Fig. 2.)

Walker: List. IV. 1129 (1849).

A specimen from Pribilof Isl., Alaska, collected by T. Kincaid, is presumably this species.

Borborus (Stratioborborus) maculipennis n. sp. (Fig. 6.)

Shining black: Front three-fourths as deep as broad, opaque on divergent and lower orbital stripes; setigerous stripes and frontal triangle lightly pruinose; bristles well developed; fronto-orbital bristles divergent, nearly equal in

size; orbital setulae in two rows, the inner two stronger than the outer, both extending above the upper fronto-orbital bristle; interfrontal bristles distinct, in five pairs, the anterior three pairs cruciate; divergent stripes with two bristles near anterior margin; face pale brown, deeply concave in profile, with brownish pruinescence; areas beneath antennae black; lower margin of epistome slightly curved up; clypeus broadly visible from in front; cheeks one-third as high as eye; anterior margins yellowish, upper portion pruinescent; vibrissae very strong; buccae with a strong upcurved anterior bristle and a few posterior hair-like setae; oral setulae distinct, becoming bristle-like at vibrissal angle; antennae very little divergent, third joint piceous, considerably larger than second; arista nearly four times antennal length, with rather long pubescence. Disc of mesonotum brownish; dorsocentral bristles in three pairs; acrostichal setulae long and hair-like, in six distinct rows between the dorsocentral bristles, middle acrostichals longer than the others; scutellum triangular; disc glossy; marginal bristles four; pleural sutures reddish; upper sternopleural bristles very much reduced. Legs long hairy, fuscous, with middle portions of middle and hind femora darker, front femora swollen, with a row of long hair-like bristles on lower surface; middle femora with two anterior bristles on apical third; middle tibiae with eight extensor and two flexor bristles; apical spur of hind tibiae strong; hind metatarsi thickened, three-fourths as long as third. Wings infumated with heavy brown markings along both outer and inner crossveins; veins brown; first section of costa with two long basal bristles; second section three and one-half times as long as third and five times fourth; inner crossvein beyond basal third of discal cell; basal section of third vein two-thirds as long as second section of fourth and two and one-half times outer crossvein; last section of third and fourth veins parallel; fifth vein extending a little more than half way to wing-margin from outer crossvein. Abdomen longer than thorax, hairy, tapering posteriorly; dorsum flattened; segments equal. Halteres yellow. Length 4-4.5 mm.

Type.—Male: Dewatto, Wash., Aug. 10, 1910 (Melander).
Paratypes.—Six specimens from the following localities: WASHINGTON: Ilwaco (Melander-Spuler), Blaine, Tulalip (Melander).
ИДНО: Moscow Mts. (Melander).

Subgenera of inermes.

- 1. Scutellum with four marginal bristles; hind tibiae with a distinct bristle near middle of flexor surface; apical spur as long as hind metatarsi *Borborillus* Duda.
 Scutellum usually with fine, long hairs in addition to the four or more marginal bristles, hind tibiae always with a long, outwardly projecting, preapical, bristle-like hair; tibial spur smaller, about one-half as long as middle metatarsi.
Borborus Meig.

Borborus Species of Subgenus Borborillus Duda.

- 1. Wings milky white; veins vitreous; eyes small2
 Wings hyaline or browned, veins browned; eyes normal5
- 2. Inner crossvein at distinctly less than one-third from base of discal cell; third section of fourth vein distinctly longer than fourth; arista short3
 Inner crossvein at basal third of discal cell; third section of fourth vein as long as fourth; hind tibiae with long bristles on extensor surface4
- 3. Eyes very small, barely higher than the cheeks from lower margin of eye to oral margin; face and cheeks yellow; front infuscate *lacteipennis* Mall.
 Eyes larger; cheeks but little more than half as high as eye; face deeply excavated below antennae; antennae reddish brown; face and cheeks opaque piceous; notum with two indistinct fuscous stripes; dorsocentral bristles in one pair.
 Fig. 7 *frigipennis* n. sp.
- 4. Lower front and divergent stripes, face, cheeks and antennae reddish; mesonotum with three pairs of distinct dorsocentral bristles; legs dark fuscous with front and middle trochanters, knees and front and middle tarsi yellow; front femora swollen, with long bristle-like hairs; abdomen rather narrow, longer than thorax. Fig. 8 *peltastes* n. sp.
 Black species; front shining black with velvety black M-shaped mark on central stripe; cheeks glossy black with lower half whitish pruinescence; legs black; front tarsi yellow; dorsocentral bristles weak, in four pairs; abdomen very short and broad *scriptus* Mall.
- 5. Notum yellow-cinereous pollinose, with distinct stripes; cheeks glossy black with a silvery pollinose area; face deeply excavated beneath antennae; second section of fourth vein less than one-third as long as third; third and fourth sections of fourth vein subequal. Fig. 13 *marmoratus* Beck.
 Notum not striped, black or slightly gray-dusted6

6. Front and hind femora distinctly swollen; hind tibiae with a double row of long hairs on extensor surface; all tarsal joints incrassate; legs black with knees and apex of femora slightly browned; cheeks about one-third as high as long diameter of eye; wings hyaline, veins yellow or pale brown; inner cross-vein but little before basal third of discal cell; third and fourth sections of fourth vein equal. Fig. 9.

singularis n. sp.

- Hind femora normal; hind tibiae without a double row of long hairs; eyes smaller; cheeks more than half as high as diameter of eye; greenish black species; front distinctly projecting *arcticus* Mall.

Boborus (Borborillus) lacteipennis Malloch.

Malloch: Proc. U. S. N. M. 44. 366 (1913). Described from Mexico.

Borborus (Borborillus) frigipennis n. sp. (Fig. 7.)

Opaque piceous. Front, at middle, not quite as broad as deep, reddish brown; vertex and ocellar triangle shining black; setigerous stripes and frontal triangle with a slight grayish sheen; bristles hair-like; fronto-orbital bristles widely divergent; inner margin of orbital stripe with a row of setae in addition to the usual orbital setulae; interfrontal setulae in six pairs, cruciate; divergent stripes with a single seta on anterior margin; face deeply excavated beneath antennae; slightly carinate; anterior margin reddish; anterior margin of epistome distinctly curved up; labrum not produced; cheeks shining, one-half as high as eye, lower margin with grayish pollen; buccae with a rather strong up-curved anterior seta and a few weak posterior setulae; oral setulae distinct; vibrissae strong; antennae reddish, with third joint very large and extending into the deeply excavated portions of the face; arista two times antennal length, sparsely pubescent. Mesonotum with two indistinct fuscous stripes; dorso-central bristles in one pair; acrostichal setulae long, in four distinct rows; scutellum short and blunt; disc bare; marginal bristles four; pleura brown, sutures yellow; upper sternopleura with three weak bristles, increasing in size posteriorly. Legs brown, with coxae, trochanters and knees yellow; front, middle, and last three joints of hind tarsi whitish; hind tibiae with a prominent apical spur and a long hair-like, pre-apical flexor bristle; hind metatarsi thickened, almost as long as the next joint. Wings and veins milky white; second section of costa a little more than twice as long as third and

three times fourth; inner crossvein before basal third of discal cell; basal section of third vein a little less than one-half as long as penultimate section of fourth vein, a little less than one-third as long as basal section of second vein and one and one-half times outer crossvein; last section of third and fourth veins parallel; fifth vein reaching a little more than half way to wing-margin from outer crossvein. Abdomen longer than thorax, dorsum flat with few weak hairs, second segment one and one-half times third. Halteres white. Length 2 mm.

Type.—Female: Lake Worth, Florida (Mrs. Slosson). *Paratypes*.—Four specimens from the same collection. The type specimen has been returned to the National Museum.

Borborus (Borborillus) peltastes n. sp. (Fig. 8.)

Opaque black. Front very distinctly produced above antennae, almost completely hiding antennae when viewed from above, three-fourths as broad as deep at middle; divergent stripes and lower frontal triangle reddish; setigerous stripes and ocellar triangle with a grayish sheen; bristles reduced; fronto-orbital bristles widely divergent, the lower slightly weaker than the upper; lower portion of orbital stripes with numerous hair-like setae; interfrontal setulae in six pairs, cruciate; face, cheeks and antennae reddish; face slightly carinate, deeply concave in profile; lower margin of epistome distinctly curved up; labrum not produced; third joint of antennae rounded, much larger than the second; arista two times antennal length, with microscopic pubescence; cheeks two-thirds as high as long axis of eye, blackened on posterior margin, lower anterior margin grayish pollinose; buccal and oral setulae weak; vibrissae strong; eyes rather small, oblique. Mesonotum with three pairs of dorsocentral bristles, the anterior two pairs considerably weaker than the posterior pair; acrostichal setulae short, in four rows; scutellum short, triangular; marginal bristles four; upper sternopleural bristles reduced, two in number, the posterior bristle almost twice as long as the anterior. Legs dark fuscous, with front and middle trochanters, knees, and front and middle tarsi yellowish; front femora thickened, with long hair-like bristles; middle tibiae with a few apical bristles; hind tibiae rather short, with a long hair-like extensor bristle; hind metatarsi as thick as tibiae, three-fourths as long as second joint. Wings whitish; costa pale brown; other veins pale yellow;

second section of costa two and one-half times third, and three and one-half times fourth; basal section of third vein one-fourth as long as last section of second vein, two-thirds as long as distance between crossveins and one and one-half times outer crossvein; last section of third and of fourth veins not convergent; last section of fifth vein extending half way to wing-margin; inner crossvein at basal third of discal cell. Abdomen long, tapering posteriorly; second segment two times third. Halteres white. Length 2.5-3 mm.

Type.—Male: Mobeste, Tex. (A. W. Barber). *Paratypes*.—Three specimens from the same collection. Coquillett reports this species to have been bred from a Scarabaeid beetle. The type specimen has been returned to the National Museum.

Borborus (Borborillus) scriptus Malloch.

Malloch: Bull. Brooklyn Ent. Soc. X. 64 (1915). Described from Illinois.

Borborus (Borborillus) marmoratus Becker. (Fig. 13.)

Becker: Mitt. Zool. Mus. Berlin, IV. 133 (1908). Duda: Arch. f. Naturg. 89 Abt. A. 4. 13 (1923).
minutus Johnson: Ann. Ent. Soc. Am. 6. 449 (1913).
brevisetus Malloch: Proc. U. S. N. M. 44, 365 (1913).

This species is quite common. One hundred and seventy-four specimens from the following localities have been examined: WASHINGTON: Chimacum, Pullman, Almota, Oroville, Spokane, Friday Harbor, Stevenson, Wawawai, Kennewick, Ilwaco, Union Flat, Centralia, LaCenter, Lake Crescent, Deer Park, Dewatto (Melander). IDAHO: Moscow, Avon, Coeur d'Alene, Kendrick, Lewiston (Melander). CALIFORNIA: Claremont (Aldrich), Palo Alto (Doane), Stanford U. (Aldrich), Mesa Grande (Cresson). BRITISH COLUMBIA: South Fork of Kokanee (Caudell). MONTANA: Lake McDonald, Glacier National Park (Melander). COLORADO: (Coquillett), Tabernish (Tucker). NEW MEXICO: Las Vegas (Barber). TEXAS: Plano (Tucker). KANSAS: Lawrence (Aldrich). MISSOURI: St. Louis (Warner). ILLINOIS: (Ill. Univ.), Chicago (Melander). PENNSYLVANIA: Chester Co., Delaware Co. (Cresson). MASSACHUSETTS: Horse Neck Beach (Hough), Forest Hills, Boston (Melander). NEW YORK: Cold Spring Harbor (Melander).

Borborus (Borborillus) singularis n. sp. (Fig. 9.)

Subshining black species. Front not produced above antennae, velvety black, with frontal triangle, and setigerous stripes silvery pollinose; face gray dusted, deeply excavated at middle, mouth-margin produced; cheeks one-third as high as long diameter of eye, glossy black, anterior margin gray dusted; buccal bristle distinct; eyes medium sized; antennae distinctly divergent; arista short, barely two times antennal length, pubescence short and dense; orbital bristles distinct. Mesonotum black, slightly gray dusted, dorsocentral bristles in four pairs; acrostichal setulae strong, in four rows between the dorsocentral rows; scutellum small, triangular, marginal bristles four; legs black, with knees and apex of tibiae slightly browned; front femora swollen; extensor surface with four distinct bristles, flexor surface with a row of hair-like bristles on apical half; middle tibiae with a number of apical bristles and a bristle on flexor surface near middle; hind femora distinctly swollen, hairy; hind tibiae with a double row of long hairs in addition to a distinct preapical bristle on extensor surface and a long bristle on apical third of flexor surface; all tarsi more or less incrassate. Wings hyaline, veins pale brown; inner crossvein slightly before basal third of discal cell; third and fourth sections of fourth vein equal or nearly so; fifth vein extending half way to wing margin. Abdomen dull black, second segment as long as the next three, base on dorsum; lateral margins of all segments with some bristles; dorsal surface of fifth and sixth segments with small bristles; hypopygium prominent, distinctly hairy. Halteres white. Length 2 mm.

Type.—Male: Kettle Falls, Washington (Melander).

Borborus (Borborillus) arcticus Malloch.

Malloch: Proc. U. S. N. M. 44. 367 (1913). Described from one female from Ungava Bay and one male and one female from Fort Chimo, Hudson Bay.

Borborus Species of Subgenus Borborus.

1. Notum with four broad olivaceous, and three narrow grayish indistinct longitudinal stripes; arista almost bare; inner crossvein distinctly beyond basal third of discal cell; third section of fourth vein slightly shorter than fourth; lower front reddish. Fig. 5 *equinus* Fall.
- Notum without such markings; third section of fourth vein distinctly longer than fourth 2

2. Scutellum with six marginal bristles, disc bare; lower front reddish; wings browned, with heavy markings along veins, veins black; legs black with coxae, trochanters, bases and apices of femora, tibiae and tarsi pale yellow. Fig. 3.

calcitrans n. sp.

Scutellum with four marginal bristles and a number of marginal hairs 3

3. Disc of scutellum bare; front with a distinct M-shaped reddish mark; face dusty yellow; labrum produced; dorsocentral bristles strong; legs with coxae, trochanters, bases and apices of femora, tibiae and tarsi yellow; abdomen broad, short, almost circular in outline, dorsum bare. Fig. 10.

neglectus Mall.

Disc of scutellum with a number of hairs; lower front reddish; wings hyaline or slightly browned; veins pale brown; legs black with knees, tibiae for the most part and tarsi reddish to yellow. Fig. 4 *nigrofemoratus* Macq.

Borborus (*Borborus*) *equinus* Fallen. (Fig. 5.)

Fallen: Dipt. Suec. Heterom. 6. (1820). (*Copromyza*.)

Duda: Arch. f. Naturg. 89 abt. A. 4. 93 (1923).

This is one of the most common of all species of Borboridae. Collections from the various parts of North America produced them. Eight hundred forty specimens from the following localities have been examined: IDAHO: Troy, Moscow Mts., Chatcolet (Melander). WASHINGTON: Bellingham, Pullman, Mt. Constitution, Union Flat, Kennewick, Centralia, Nahcotta, Lake Crescent, LaCenter, Deer Park, Olga, Palouse, Chehalis, Chimacum (Melander), Ilwaco (Melander-Spuler), Grand Coulee (Doane). CALIFORNIA: Berkeley (Cresson), Alameda (Cresson-Doane), Mesa Grande (Baumberger), Sta. Clara Co. (Coleman), Redwood Canyon (Cresson), Palo Alto, Stanford University (Doane). BRITISH COLUMBIA: South Fork, Kokanee Mt. (Caudell). OREGON: Hood River, Salem (Melander). MONTANA: Lake McDonald, Glacier National Park (Melander). WYOMING: Sheridan (Metz). TEXAS: College Station (Webster). INDIANA: Lafayette (Melander). OHIO: Columbus, Waseon, Defiance, Medina (Hine). WISCONSIN: Milwaukee Co. (Brues). ILLINOIS: (Ill. Univ.), (U. S. N. M.). KANSAS: Douglas (Snow), Lawrence (Tucker). MISSOURI: St. Louis (Warner). MISSISSIPPI: (U. S. N. M.). MASSACHUSETTS: Greenfield, Boston, New Bedford (Melander). QUEBEC: St. Johns Co. PENNSYLVANIA: Swarthmore, Jack Run (Cresson). NEW YORK: Cold Spring Harbor (Melander).

Borborus (Borborus) calcitrans n. sp. (Fig. 3.)

Shining black, slightly brownish pruinose. Front two-thirds as long as broad; the divergent stripes depressed, opaque, slightly reddish anteriorly and merging to black at vertex; interfrontal setulae very weak; four in number, not extending up to the lower fronto-orbital bristle and not cruciate; lower portion of divergent stripes with numerous setulae; fronto-orbital bristles widely divergent, uniform in size; face piceous, reddish between the antennae, lateral margins glossy black, shallowly and uniformly concave in profile; labrum distinctly produced, slightly reddish; cheeks, at vibrissal angle, two-fifths as high as eye, with a posterior glossy black spot below eye; vibrissae strong; buccae and oral margin with weak setulae; antennae large; basal joints black; third joint piceous, much larger than the second; arista pubescent, two and one-half times antennal length. Mesonotum with three pairs of dorsocentral bristles, the anterior two pairs rather indistinct; acrostichal hairs rather long, arranged in four distinct rows; scutellum triangular, with six marginal bristles, the middle pair hair-like, weaker than the others, disc bare; lower pleura glossy black. Legs with coxae, trochanters, bases and apices of femora narrowly, bases of tibiae broadly, apices of tibiae and basal joints of tarsi reddish brown; front femora slightly swollen; hind femora long and slender; middle tibiae with a single flexor bristle on apical third and about six apical bristles; hind tibiae with a single long, hair-like bristle on outer side near apex, nearly as long as the slightly thickened second joint. Wings distinctly browned, veins piceous; costa with minute setulae, first section three-fifths as long as second, third section one and one-fourth times fourth and one-third as long as second; inner crossvein at slightly before basal third of discal cell; third section distinctly longer than fourth; outer angle of discal cell rounded; third and fourth veins not converging toward tip of wing. Abdomen broad, almost bare, lateral margin with a few hairs; second segment elongated. Halteres testaceous. Length: 4 mm.

Type.—Female: Pullman, Wash. (W. M. Mann). *Paratype*.—A single specimen collected by G. I. Reeves at Pullman, Wash.

Borborus (Borborus) neglectus Malloch. (Fig. 10.)

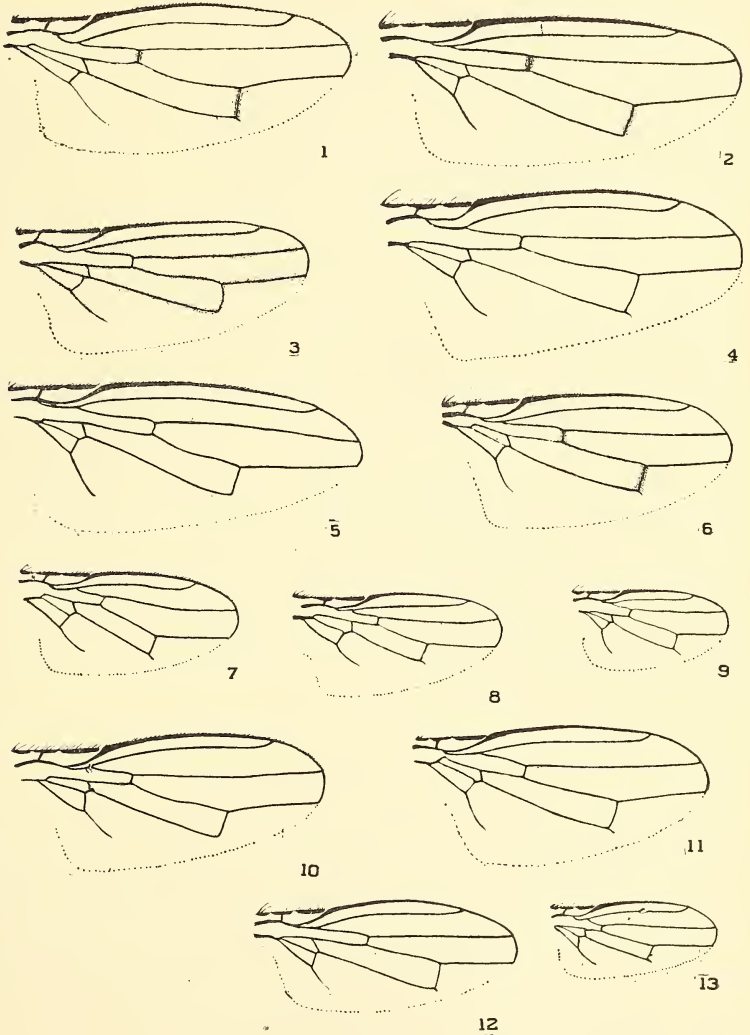
Malloch: Proc. U. S. N. M. 44. 364 (1913).

Described from one female specimen from Beverley, Mass. Three specimens from Pullman, Wash. (Mann), agree with Malloch's description of this species.

Borborus (Borborus) nigrofemoratus Macq. (Fig. 4.)

Stenhammar: Coprom. Scand. 346. (88) (1885). (*Copro-myza*). Duda: Arch. f. Naturg. 85. abt. A. 4. 22 (1923).

A single specimen from Corvallis, Ore., from the collection of A. L. Melander, agrees with this species.



EXPLANATION OF PLATE.

- Fig. 1. *B. (Crumomyia) immensus* n. sp.
 Fig. 2. *B. (Stratioborborus) annulus* Walk.
 Fig. 3. *B. (Borborus) calcitrans* n. sp.
 Fig. 4. *B. (Borborus) nigrofemoratus* Macq.
 Fig. 5. *B. (Borborus) equinus* Fall.
 Fig. 6. *B. (Stratioborborus) maculipennis* n. sp.
 Fig. 7. *B. (Borborillus) frigipennis* n. sp.
 Fig. 8. *B. (Borborillus) peltastes* n. sp.
 Fig. 9. *B. (Borborillus) singularis* n. sp.
 Fig. 10. *B. (Borborus) neglectus* Mall.
 Fig. 11. *B. (Stratioborborus) setitibialis* n. sp.
 Fig. 12. *Scatophora carolinensis* Rob.-Des.
 Fig. 13. *B. (Borborillus) marmoratus* Beck.

The Third International Congress of Entomology will be held at Zurich, Switzerland, July 19th to 26th, 1925, with Dr. A. V. Schulthess as president. General Secretary Dr. Leuzinger, Gloristrasse 72, Zurich, 7, Switzerland. All entomologists are cordially invited.

For the Executive Committee,
HENRY SKINNER.

* * *

The first and second congresses held at Brussels and Oxford, respectively, were very successful and it is now proposed to hold the Third Congress in a neutral country where entomologists of the belligerent countries could meet without embarrassment, and Switzerland has been suggested as a suitable place and attractive in many ways and convenient for the majority.

Hydrometra australis Say in New York State. (Hemip.)—A winged male of this species, collected by Mr. Bueno and myself at White Plains, N. Y., 19. IX. 1919, has stood in my collection for more than five years under another name, and only recently was its true identity recognized. This species was originally described from Louisiana, has since been recorded from Kansas, Florida, and Georgia, and I have seen a specimen from North Carolina. The New York record extends its known range very remarkably.—R. F. Hussey, N. York, N. Y.